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=> e briles david e/au

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E1            1     BRILES D E */AU
E2            7     BRILES DAVID/AU
E3          208 --> BRILES DAVID E/AU
E4            1     BRILES DAVID F/AU
E5            2     BRILES E/AU
E6           35     BRILES E B/AU
E7            1     BRILES E C/AU
E8            1     BRILES E D/AU
E9            1     BRILES E E/AU
E10           1     BRILES E I/AU
E11           9     BRILES E I B/AU
E12           2     BRILES E W/AU

=> s e1-e3

L1          216 ("BRILES D E *"/AU OR "BRILES DAVID"/AU OR "BRILES
DAVID E"/AU)

=> e hollingshead susan k/au

E1            1     HOLLINGSHEAD STEPHEN C/AU
E2           20     HOLLINGSHEAD SUSAN/AU
E3           86 --> HOLLINGSHEAD SUSAN K/AU
E4            1     HOLLINGSHEAD SUSAN KAY/AU
E5            2     HOLLINGSHEAD T A/AU
E6            1     HOLLINGSHEAD T S/AU
E7            1     HOLLINGSHEAD TIMOTHY W/AU
E8            5     HOLLINGSHEAD W/AU
E9            9     HOLLINGSHEAD W S/AU
E10           2     HOLLINGSHEAD WAYNE/AU
E11           4     HOLLINGSHEAD WAYNE S/AU
E12           1     HOLLINGSHEAD WILLIAM P/AU

=> s e2-e4

L2          107 ("HOLLINGSHEAD SUSAN"/AU OR "HOLLINGSHEAD SUSAN K"/AU
OR "HOLLIN      GSHEAD SUSAN KAY"/AU)

=> e brooks-walter alexis/au

E1            2     BROOKS ZEECHA/AU
E2            3     BROOKS ZOE/AU
E3            0 --> BROOKS-WALTER ALEXIS/AU
E4           10     BROOKSALER F/AU
E5            8     BROOKSALER F S/AU
E6            1     BROOKSAND H/AU
E7            1     BROOKSBAN R N/AU
E8            1     BROOKSBAND CATH/AU
E9            9     BROOKSBANK A/AU
E10           2     BROOKSBANK A J/AU
E11          45     BROOKSBANK B W/AU
E12          94     BROOKSBANK B W L/AU

=> e brooks walter alexis/au

E1           40     BROOKS WALTER A/AU
E2            1     BROOKS WALTER A J/AU
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E3          22 --> BROOKS WALTER ALEXIS/AU
E4           1     BROOKS WALTER ALEXIS JANINE/AU
E5           1     BROOKS WALTER C/AU
E6           1     BROOKS WALTER E/AU
E7           1     BROOKS WALTER FANGER/AU
E8           2     BROOKS WALTER G/AU
E9           3     BROOKS WALTER JR/AU
E10          9     BROOKS WALTER L/AU
E11          3     BROOKS WALTER R/AU
E12          4     BROOKS WANDA/AU

=> s e1-e4

L3          64 ("BROOKS WALTER A"/AU OR "BROOKS WALTER A J"/AU OR
"BROOKS WALTE
               R ALEXIS"/AU OR "BROOKS WALTER ALEXIS JANINE"/AU)

=> s l1-l3

L4         324 (L1 OR L2 OR L3)

=> s l4 and pspc

L5          38 L4 AND PSPC

=> s l5 and epitop?

L6           6 L5 AND EPITOP?

=> dup rem l6

PROCESSING COMPLETED FOR L6
L7            4 DUP REM L6 (2 DUPLICATES REMOVED)

=> d bib ab 1-4


L7   ANSWER 1 OF 4  USPATFULL
AN     2001:139158  USPATFULL
TI     Pneumococcal surface protein C (PspC), epitopic
       regions and strain selection thereof, and uses therefor
IN     Briles, David E., Birmingham, AL, United States
       Hollingshead, Susan K., Birmingham, AL, United States
       Brooks-Walter, Alexis, Birmingham, AL, United States
PI     US 2001016200      A1   20010823
AI     US 2000-748875     A1   20001226 (9)
RLI    Division of Ser. No. US 1999-298523, filed on 23 Apr 1999,
PENDING
PRAI   US 1998-82728       19980423 (60)
DT     Utility
FS     APPLICATION
LREP   FROMMER LAWRENCE & HAUG, 745 FIFTH AVENUE, NEW YORK, NY, 10151
CLMN   Number of Claims: 27
ECL    Exemplary Claim: 1
DRWN   50 Drawing Page(s)
LN.CNT 1911
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB     Disclosed and claimed are: epitopic regions of Pneumococcal
       Surface Protein C or "PspC", different clades of PspC
```

, isolated and/or purified nucleic acid molecules such as DNA encoding a fragment or portion of **PspC** such as an **epitopic** region of **PspC** or at least one **epitope** of **PspC**, uses for such nucleic acid molecules, e.g., to detect the presence of **PspC** or of S. pneumoniae by detecting a nucleic acid molecule therefor in a sample such as by amplification and/or a polymerase chain reaction, vectors or plasmids which contain and/or express such nucleic acid molecles, e.g., in vitro or in vivo, immunological, immunogenic or vaccine compositions including at least one **PspC** and/or a portion thereof (such as at least one **epitopic** region of at least one **PspC** and/or at least one polypeptide encoding at least one **epitope** of at least one **PspC**), either alone or in further combination with at least one second pneumococcal antigen, such as at least one different **PspC** and/or a fragment thereof and/or at least one PspA and/or at least one **epitopic** region of at least one PspA and/or at least one polypeptide including at least one **epitope** of PspA. **PspC** or a fragment thereof, and thus a composition including **PspC** or a fragment thereof, can be administered by the same routes, and in approximately the same amounts, as PspA. Thus, the invention further provides methods for administering **PspC** or a fragment thereof, as well as uses of **PspC** or a fragment thereof to formulate such compositions.

L7 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2001 ACS
AN 2000:900482 CAPLUS
DN 134:46755
TI Pneumococcal surface protein combination vaccine
IN Huebner, Robert C.; Sampson, Jacquelyn S.; Carlone, George M.; Ades, Edwin; **Briles, David E.**
PA Uab Research Foundation, USA; Aventis Pasteur; Centers for Disease Control and Prevention
SO PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000076541	A1	20001221	WO 2000-US40176	20000609

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW,

AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
PRAI US 1999-138422 P 19990610
US 2000-587833 A 20000606
AB The present invention relates to synergistic immunogenic combinations
contg. two or more pneumococcal surface proteins, including PspA and/or
PspC and/or PsaA, advantageously, PspA and PsaA. Also provided
are methods of intranasal administration of such immunogenic combinations
to reduce nasopharyngeal carriage of pneumococci and methods of use of
such immunogenic combinations in the prevention and treatment of S.
pneumoniae infection.
RE.CNT 7
RE
(1) Briles; Ann N Y Acad Sci 1996, V797, P118 CAPLUS
(2) Briles; Infect Immun 2000, V68(2), P796 CAPLUS
(3) Briles; Vaccine 2000, V18(16), P1707 CAPLUS
(4) Carlone; WO 9945121 A1 1999 CAPLUS
(5) Ogunniyi; Infect Immun 2000, V68(5), P3028 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 4 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 1
AN 1999-620581 [53] WPIDS
DNC C1999-181229
TI New **epitope** polypeptides of Pneumococcal surface protein C, used to develop products for immunological, immunogenic or vaccine compositions, particularly against Streptococcus pneumoniae infections.
DC B04 D16
IN BRILES, D E; **BROOKS-WALTER, A**; HOLLINGSHEAD, S K
PA (UYAL-N) UNIV ALABAMA; (BRIL-I) BRILES D E; (BROO-I) BROOKS-WALTER A;
(HOLL-I) HOLLINGSHEAD S K
CYC 87
PI WO 9953940 A1 19991028 (199953)* EN 108p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG US UZ VN YU ZA ZW
AU 9937584 A 19991108 (200014)
EP 1073450 A1 20010207 (200109) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 2001016200 A1 20010823 (200151)
ADT WO 9953940 A1 WO 1999-US8895 19990423; AU 9937584 A AU 1999-37584

19990423; EP 1073450 A1 EP 1999-919991 19990423, WO 1999-US8855 19990423;
US 2001016200 A1 Provisional US 1998-82728P 19980423, Div ex US 1999-298523 19990423, US 2000-748875 20001226
FDT AU 9937584 A Based on WO 9953940; EP 1073450 A1 Based on WO 9953940
PRAI US 1998-82728P 19980423; US 1999-298523 19990423; US 2000-748875
20001226
AB WO 9953940 A UPAB: 19991215
NOVELTY - (A) A novel isolated and/or purified polypeptide (I) comprises
at least one **epitope** or **epitopic** region of
Pneumococcal surface protein C (**PspC**).
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) an immunogenic, immunological or vaccine composition comprising a
polypeptide (I);
(2) an isolated and/or purified nucleic acid molecule comprising a
nucleotide sequence (II) encoding (I);
(3) a vector or plasmid (III) comprising (II);
(4) a vaccine or immunological or immunogenic composition (IV)
comprising (III);
(5) a method for eliciting an immunological response against
Streptococcus pneumoniae comprising administering (I) or composition
comprising (I) or (III);
(6) a method for eliciting an anti-PspA antibody comprising
administering (I) or a composition comprising (I) or (III);
(7) a method for detecting **pspC** and/or pspA or
Streptococcus pneumoniae, comprising contacting the isolated nucleic acid
molecule with a sample and detecting hybridization where hybridization is
indicative of the presence of **pspC** and/or pspA or Streptococcus
pneumoniae.
USE - The polypeptides or vectors can be used as immunogenic,
immunological or vaccine compositions (claimed). The compositions can be
used for eliciting an immunological response against Streptococcus
pneumoniae (SP) (claimed), which can cause otitis media, meningitis,
bacteremia and pneumonia. They can be used for eliciting an anti-PspA
antibody (claimed). The nucleic acid molecules can also be used for
detecting **pspC**, pspA or SP (claimed).
Dwg.0/21

L7 ANSWER 4 OF 4 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:42284 BIOSIS
DN PREV199900042284
TI Pneumococcal diversity: Considerations for new vaccine strategies with

emphasis on pneumococcal surface protein A (PspA.
AU **Briles, David E. (1)**; Tart, Rebecca Creech; Swiatlo, Edwin; Dillard, Joseph P.; Smith, Patricia; Benton, Kimberly A.; Ralph, Beth A.;
Brooks-Walter, Alexis; Crain, Marilyn J.; **Hollingshead, Susan K.**; McDaniel, Larry S.
CS (1) Dep. Microbiology, University Alabama Birmingham, 658 BBRB, Mail Box
10, Birmingham, AL 35294-2170 USA
SO Clinical Microbiology Reviews, (Oct., 1998) Vol. 11, No. 4, pp. 645-657.
ISSN: 0893-8512.
DT General Review
LA English

=> dup rem l5

PROCESSING COMPLETED FOR L5
L8 14 DUP REM L5 (24 DUPLICATES REMOVED)

=> d bib ab 1-14

L8 ANSWER 1 OF 14 USPATFULL
AN 2001:139158 USPATFULL
TI Pneumococcal surface protein C (**PspC**), epitopic regions and strain selection thereof, and uses therefor
IN **Briles, David E.**, Birmingham, AL, United States
Hollingshead, Susan K., Birmingham, AL, United States
Brooks-Walter, Alexis, Birmingham, AL, United States
PI US 2001016200 A1 20010823
AI US 2000-748875 A1 20001226 (9)
RLI Division of Ser. No. US 1999-298523, filed on 23 Apr 1999, PENDING
PRAI US 1998-82728 19980423 (60)
DT Utility
FS APPLICATION
LREP FROMMER LAWRENCE & HAUG, 745 FIFTH AVENUE, NEW YORK, NY, 10151
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN 50 Drawing Page(s)
LN.CNT 1911
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed and claimed are: epitopic regions of Pneumococcal Surface
Protein C or "**PspC**", different clades of **PspC**,
isolated and/or purified nucleic acid molecules such as DNA encoding a
fragment or portion of **PspC** such as an epitopic region of **PspC** or at least one epitope of **PspC**, uses for such
nucleic acid molecules, e.g., to detect the presence of **PspC**
or of S. pneumoniae by detecting a nucleic acid molecule therefor in a
sample such as by amplification and/or a polymerase chain reaction,
vectors or plasmids which contain and/or express such nucleic acid
molecles, e.g., in vitro or in vivo, immunological, immunogenic or

vaccine compositions including at least one **PspC** and/or a portion thereof (such as at least one epitopic region of at least one **PspC** and/or at least one polypeptide encoding at least one epitope of at least one **PspC**), either alone or in further combination with at least one second pneumococcal antigen, such as at least one different **PspC** and/or a fragment thereof and/or at least one PspA and/or at least one epitopic region of at least one PspA and/or at least one polypeptide including at least one epitope of PspA.

PspC or a fragment thereof, and thus a composition including **PspC** or a fragment thereof, can be administered by the same routes, and in approximately the same amounts, as PspA. Thus, the invention further provides methods for administering **PspC** or a fragment thereof, as well as uses of **PspC** or a fragment thereof to formulate such compositions.

L8 ANSWER 2 OF 14 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 1
AN 2001151312 EMBASE
TI **PspC**, a pneumococcal surface protein, binds human factor H.
AU Dave S.; **Brooks-Walter A.**; Pangburn M.K.; McDaniel L.S.
CS L.S. McDaniel, Univ. of Mississippi Medical Center, 2500 North State St., Jackson, MS 39216, United States. LMcDaniel@microbio.umsmed.edu
SO Infection and Immunity, (2001) 69/5 (3435-3437).
Refs: 17
ISSN: 0019-9567 CODEN: INFIBR
CY United States
DT Journal; Article
FS 004 Microbiology
026 Immunology, Serology and Transplantation
LA English
SL English
AB **PspC** was found to bind human complement factor H (FH) by Western blot analysis of D39 (**pspC**(+)) and an isogenic mutant TRE108 (**pspC**). We confirmed that PspA does not bind FH, while purified **PspC** binds FH very strongly. The binding of FH to exponentially growing pneumococci varied among different isolates when analyzed by fluorescence activated cell sorting analysis.

L8 ANSWER 3 OF 14 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 2
AN 2001151303 EMBASE
TI Characterization of binding of human lactoferrin to pneumococcal surface protein A.
AU Hakansson A.; Roche H.; Mirza S.; McDaniel L.S.; **Brooks-Walter A.**; Briles D.E.
CS A. Hakansson, Department of Microbiology, University of Alabama, BBRB-662 Box 10, 845 19th Street South, Birmingham, AL 35294, United States.
Anders.Hakansson@mig.lu.se
SO Infection and Immunity, (2001) 69/5 (3372-3381).

Refs: 60
ISSN: 0019-9567 CODEN: INFIBR
CY United States
DT Journal; Article
FS 004 Microbiology
005 General Pathology and Pathological Anatomy
026 Immunology, Serology and Transplantation
LA English
SL English
AB Human lactoferrin is an iron-binding glycoprotein that is particularly prominent in exocrine secretions and leukocytes and is also found in serum, especially during inflammation. It is able to sequester iron from microbes and has immunomodulatory functions, including inhibition of both complement activation and cytokine production. This study used mutants lacking pneumococcal surface protein A (PspA) and **PspC** to demonstrate that the binding of human lactoferrin to the surface of Streptococcus pneumoniae was entirely dependent on PspA. Lactoferrin bound both family 1 and family 2 PspAs. Binding of lactoferrin to PspA was shown by surface colocalization with PspA and was verified by the lack of binding to PspA-negative mutants. Lactoferrin was expressed on the body of the cells but was largely absent from the poles. **PspC** showed exactly the same distribution on the pneumococcal surface as PspA but did not bind lactoferrin. PspA's binding site for lactoferrin was mapped using recombinant fragments of PspA of families 1 and 2. Binding of human lactoferrin was detected primarily in the C-terminal half of the .alpha.-helical domain of PspA (amino acids 167 to 288 of PspA/Rx1), with no binding to the N-terminal 115 amino acids in either strain. The interaction was highly specific. As observed previously, bovine lactoferrin bound poorly to PspA. Human transferrin did not bind PspA at all. The binding of lactoferrin to S. pneumoniae might provide a way for the bacteria to interfere with host immune functions or to aid in the acquisition of iron at the site of infection.

L8 ANSWER 4 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 2001:130120 BIOSIS
DN PREV200100130120
TI Streptococcus pneumoniae: New tools for an old pathogen.
AU **Hollingshead, Susan K. (1); Briles, David E.**
CS (1) Department of Microbiology, University of Alabama at Birmingham, Birmingham, AL, 35294: hollings@uab.edu USA

SO Current Opinion in Microbiology, (February, 2001) Vol. 4, No. 1, pp.
71-77. print.
ISSN: 1369-5274.
DT Article
LA English
SL English
AB The pneumococcus is one of the longest-known pathogens. It has been
instrumental to our understanding of biology in many ways, such as in the
discovery of the Gram strain and the identification of nucleic acid as the
hereditary material. Despite major advances in our understanding of
pneumococcal pathogenesis, the need for vaccines and antibiotics to combat
this pathogen is still vital. Genomics is beginning to uncover new
virulence factors to advance this process, and it is enabling the
development of DNA chip technology, which will permit the analysis of gene
expression in specific tissues and in virulence regulatory circuits.

L8 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2001 ACS
AN 2000:900482 CAPLUS
DN 134:46755
TI Pneumococcal surface protein combination vaccine
IN Huebner, Robert C.; Sampson, Jacquelyn S.; Carlone, George M.; Ades,
Edwin; **Briles, David E.**
PA Uab Research Foundation, USA; Aventis Pasteur; Centers for Disease Control
and Prevention
SO PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000076541	A1	20001221	WO 2000-US40176	20000609

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,
CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-138422 P 19990610
US 2000-587833 A 20000606
AB The present invention relates to synergistic immunogenic combinations
contg. two or more pneumococcal surface proteins, including PspA and/or
PspC and/or PsaA, advantageously, PspA and PsaA. Also provided
are methods of intranasal administration of such immunogenic combinations
to reduce nasopharyngeal carriage of pneumococci and methods of use of
such immunogenic combinations in the prevention and treatment of S.
pneumoniae infection.
RE.CNT 7
RE
(1) Briles; Ann N Y Acad Sci 1996, V797, P118 CAPLUS
(2) Briles; Infect Immun 2000, V68(2), P796 CAPLUS
(3) Briles; Vaccine 2000, V18(16), P1707 CAPLUS
(4) Carlone; WO 9945121 A1 1999 CAPLUS
(5) Ogunniyi; Infect Immun 2000, V68(5), P3028 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 14 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 3
AN 2000074410 EMBASE
TI The potential to use PspA and other pneumococcal proteins to elicit
protection against pneumococcal infection.
AU Briles D.E.; Hollingshead S.; **Brooks-Walter A.**; Nabors G.S.;
Ferguson L.; Schilling M.; Gravenstein S.; Braun P.; King J.; Swift A.
CS D.E. Briles, Department of Microbiology, University of Alabama, 658 BBLB,
845 19th Street South, Birmingham, AL 35294, United States.
dbriles@uab.edu
SO Vaccine, (2000) 18/16 (1707-1711).
Refs: 24
ISSN: 0264-410X CODEN: VACCDE
PUI S 0264-410X(99)00511-3
CY United Kingdom
DT Journal; General Review
FS 004 Microbiology
026 Immunology, Serology and Transplantation
037 Drug Literature Index
LA English
SL English
AB Pneumococcal proteins, alone, in combination with each other, or in
combination with capsular polysaccharide-protein conjugates may be useful
pneumococcal vaccine components. Four proteins with a potential for use in
vaccines are PspA, pneumolysin, PsaA, and **PspC**. In a mouse model
of carriage, PsaA and **PspC** were the most efficacious vaccine
proteins. Of these, PsaA was the best at eliciting protection against
carriage. However, a combination of PspA and pneumolysin may elicit

stronger immunity to pulmonary infection and possibly sepsis than either protein alone. Recently, a phase one trial of a recombinant family 1 PspA was completed in man. PspA was observed to be safe and immunogenic. Injection of 0.1 ml of immune serum diluted to 1/400 was able to protect mice from fatal infection with S. pneumoniae. Under these conditions, pre-immune serum was not protective. The immune human serum protected mice from infections with pneumococci expressing either of the major PspA families (1 and 2) and both of the pneumococcal capsular types tested: 3 and 6. (C) 2000 Elsevier Science Ltd.

L8 ANSWER 7 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 2001:4066 BIOSIS
DN PREV200100004066
TI Streptococcus pneumoniae.
AU Briles, D. E. (1); Hollingshead, S. (1); **Brooks-Walter, A. (1)**
CS (1) Univ. of Alabama, Birmingham, AL USA
SO Abstracts of the Interscience Conference on Antimicrobial Agents and Chemotherapy, (2000) Vol. 40, pp. 532-533. print.
Meeting Info.: 40th Interscience Conference on Antimicrobial Agents and Chemotherapy Toronto, Ontario, Canada September 17-20, 2000
DT Conference
LA English
SL English

L8 ANSWER 8 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 2000:370908 BIOSIS
DN PREV200000370908
TI Regulation of the gene encoding pneumococcal surface protein C (**pspC**) in Streptococcus pneumoniae.
AU Balachandran, P. (1); **Brooks-Walter, A. J. (1)**; Hollingshead, S. K. (1); Briles, D. E. (1)
CS (1) University of Alabama, Birmingham, AL USA
SO Abstracts of the General Meeting of the American Society for Microbiology, (2000) Vol. 100, pp. 101. print.
Meeting Info.: 100th General Meeting of the American Society for Microbiology Los Angeles, California, USA May 21-25, 2000 American Society for Microbiology
. ISSN: 1060-2011.
DT Conference
LA English
SL English

L8 ANSWER 9 OF 14 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 4
AN 1999-620581 [53] WPIDS
DNC C1999-181229

TI New epitope polypeptides of Pneumococcal surface protein C, used to
develop products for immunological, immunogenic or vaccine compositions,
particularly against Streptococcus pneumoniae infections.
DC B04 D16
IN BRILES, D E; **BROOKS-WALTER, A**; HOLLINGSHEAD, S K
PA (UYAL-N) UNIV ALABAMA; (BRIL-I) BRILES D E; (BROO-I) BROOKS-WALTER A;
(HOLL-I) HOLLINGSHEAD S K
CYC 87
PI WO 9953940 A1 19991028 (199953)* EN 108p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG US UZ VN YU ZA ZW
AU 9937584 A 19991108 (200014)
EP 1073450 A1 20010207 (200109) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 2001016200 A1 20010823 (200151)
ADT WO 9953940 A1 WO 1999-US8895 19990423; AU 9937584 A AU 1999-37584 19990423; EP 1073450 A1 EP 1999-919991 19990423, WO 1999-US8895 19990423;
US 2001016200 A1 Provisional US 1998-82728P 19980423, Div ex US 1999-298523 19990423, US 2000-748875 20001226
FDT AU 9937584 A Based on WO 9953940; EP 1073450 A1 Based on WO 9953940
PRAI US 1998-82728P 19980423; US 1999-298523 19990423; US 2000-748875
20001226
AB WO 9953940 A UPAB: 19991215
NOVELTY - (A) A novel isolated and/or purified polypeptide (I) comprises
at least one epitope or epitopic region of Pneumococcal surface protein C
(**PspC**).
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) an immunogenic, immunological or vaccine composition comprising a
polypeptide (I);
(2) an isolated and/or purified nucleic acid molecule comprising a
nucleotide sequence (II) encoding (I);
(3) a vector or plasmid (III) comprising (II);
(4) a vaccine or immunological or immunogenic composition (IV)
comprising (III);
(5) a method for eliciting an immunological response against
Streptococcus pneumoniae comprising administering (I) or composition
comprising (I) or (III);
(6) a method for eliciting an anti-PspA antibody comprising

administering (1) or a composition comprising (I) or (III),
(7) a method for detecting **pspC** and/or pspA or Streptococcus pneumoniae, comprising contacting the isolated nucleic acid molecule with a sample and detecting hybridization where hybridization is indicative of the presence of **pspC** and/or pspA or Streptococcus pneumoniae.

USE - The polypeptides or vectors can be used as immunogenic, immunological or vaccine compositions (claimed). The compositions can be used for eliciting an immunological response against Streptococcus pneumoniae (SP) (claimed), which can cause otitis media, meningitis, bacteremia and pneumonia. They can be used for eliciting an anti-PspA antibody (claimed). The nucleic acid molecules can also be used for detecting **pspC**, pspA or SP (claimed).

Dwg.0/21

L8 ANSWER 10 OF 14 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 5

AN 1999406746 EMBASE

TI The **pspC** gene of Streptococcus pneumoniae encodes a polymorphic protein, **PspC**, which elicits cross-reactive antibodies to PspA and provides immunity to pneumococcal bacteremia.

AU **Brooks-Walter A.**; Briles D.E.; Hollingshead S.K.

CS A. Brooks-Walter, Department of Microbiology, University of Alabama, Birmingham, AL 35294, United States. alexis@uab.edu

SO Infection and Immunity, (1999) 67/12 (6533-6542).
Refs: 33
ISSN: 0019-9567 CODEN: INFIBR

CY United States

DT Journal; Article

FS 004 Microbiology
026 Immunology, Serology and Transplantation

LA English

SL English

AB **PspC** is one of three designations for a pneumococcal surface protein whose gene is present in approximately 75% of all Streptococcus pneumoniae strains. Under the name SpsA, the protein has been shown to bind secretory immunoglobulin A (S. Hammerschmidt, S. R. Talay, P. Brandtzaeg, and G. S. Chhatwal, Mol. Microbiol. 25:1113-1124, 1997). Under the name CbpA, the protein has been shown to interact with human epithelial and endothelial cells (C. Rosenow et al., Mol. Microbiol. 25:819-829, 1997). The gene is paralogous to the pspA gene in S. pneumoniae and was thus called **pspC** (A. Brooks-Walter, R. C. Tart, D. E. Briles, and S. K. Hollingshead, Abstracts of the 97th General Meeting of the American Society for Microbiology 1997). Sequence

comparisons of five published and seven new alleles reveal that this gene has a mosaic structure, and modular domains have contributed to gene diversity during evolution. Two major clades exist: clade A alleles are larger and contain an extra module that is shared with many pspA alleles; clade B alleles are smaller and lack this pspA-like domain. All alleles have a proline-rich domain and a choline-binding repeat domain that show 0% divergence from similar domains in the PspA protein. Immunization of a rabbit with a recombinant clade B **PspC** molecule produced antiserum that cross- reacted with both **PspC** and PspA from 15 pneumococcal isolates. The cross- reactive antibodies afforded cross-protection in a mouse model system. Mice immunized with **PspC** were protected against challenge with a strain that expressed PspA but not **PspC**. The PspA- and **PspC**-cross-reactive antibodies were directed to the proline-rich domain present in both molecules.

L8 ANSWER 11 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:42284 BIOSIS
DN PREV199900042284
TI Pneumococcal diversity: Considerations for new vaccine strategies with emphasis on pneumococcal surface protein A (PspA.
AU **Briles, David E. (1)**; Tart, Rebecca Creech; Swiatlo, Edwin; Dillard, Joseph P.; Smith, Patricia; Benton, Kimberly A.; Ralph, Beth A.; **Brooks-Walter, Alexis**; Crain, Marilyn J.; **Hollingshead, Susan K.**; McDaniel, Larry S.
CS (1) Dep. Microbiology, University Alabama Birmingham, 658 BBRB, Mail Box 10, Birmingham, AL 35294-2170 USA
SO Clinical Microbiology Reviews, (Oct., 1998) Vol. 11, No. 4, pp. 645-657.
ISSN: 0893-8512.
DT General Review
LA English

L8 ANSWER 12 OF 14 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 6
AN 1997-202002 [18] WPIDS
DNC C1997-064574
TI Streptococcus pneumoniae surface protein **PspC** and truncated PspA - used in vaccines for protecting animals against S.pneumoniae infection.
DC B04 D16
IN BRILES, D E; **BROOKS-WALTER, A**; CRAIN, M J; HOLLINGSHEAD, S; MCDANIEL, L S; SWIATLO, E; TART, R; YOTHER, J
PA (UABR-N) UAB RES FOUND; (UYAL-N) UNIV ALABAMA UAB RES FOUND ALABAMA BIRMI
CYC 23
PI WO 9709994 A1 19970320 (199718)* EN 227p

RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA FI IL JP NO
AU 9672392 A 19970401 (199730)
NO 9801169 A 19980515 (199829)
FI 9800561 A 19980513 (199834)
AU 703434 B 19990325 (199924)
AU 9923626 A 19990701 (199937)
EP 946188 A1 19991006 (199946) EN
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 11513371 W 19991116 (200005) 342p
ADT WO 9709994 A1 WO 1996-US14819 19960916; AU 9672392 A AU 1996-72392
19960916; NO 9801169 A WO 1996-US14819 19960916, NO 1998-1169 19980316; FI
9800561 A WO 1996-US14819 19960916, FI 1998-561 19980313; AU 703434 B AU
1996-72392 19960916; AU 9923626 A AU 1999-23626 19990407; EP 946188 A1 EP
1996-933794 19960916, WO 1996-US14819 19960916; JP 11513371 W WO
1996-US14819 19960916, JP 1997-512172 19960916
FDT AU 9672392 A Based on WO 9709994; AU 703434 B Previous Publ. AU 9672392,
Based on WO 9709994; AU 9923626 A Div ex AU 703434; EP 946188 A1 Based on
WO 9709994; JP 11513371 W Based on WO 9709994
PRAI US 1995-529055 19950915
AB WO 9709994 A UPAB: 19970502
An isolated peptide fragment (A) of Streptococcus pneumoniae surface
protein A (PspA) corresp. to residues 1-115, 1-260, 192-588 or 192-299 is
new. Also new is an amino acid (aa) molecule (B) comprising pneumococcal
surface protein C (**PspC**) of S. pneumoniae having alpha -helical
(pref. comprising a C-terminus with substantial homology to a
protection-eliciting region of PspA), proline rich and repeat regions.
Also claimed are: (1) an isolated DNA molecule (I) encoding (A); (2) an
isolated DNA molecule (II) encoding (B); and (3) an isolated DNA molecule
(Ia) consisting of nucleotides 1-26, 1967-1990, 161-187, 1093-1117,
1312-1331 or 1333-1355 of the Streptococcus pneumoniae surface protein A
gene (pspA).
USE - The truncated PspA peptides (A) and the PspA-like protein,
PspC (B) or fragments of these (e.g. 8-9 aa for a CD4+ T-cell
response and 13-25 aa for a CD8+ T-cell response) may be used in vaccines
for protection against S. pneumoniae infection and hence for the
prevention of diseases caused by S. pneumoniae such as meningitis, otitis
media, bacteraemia and pneumonia. Fragments of (I), (Ia) or (II) may be
used as primers or probes for the identification and amplification of
PspA, **PspC** and related genes. In partic., fragments derived from

the highly conserved repeat region of PspA (such as the 13 specific
sequences derived from S.pneumoniae Rx1 PspA) or **PspC** are useful for the identification of most if not all pneumococcal strains. Dwg.0/29

L8 ANSWER 13 OF 14 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 7
AN 1998044422 EMBASE
TI PspA and **PspC**: Their potential for use as pneumococcal vaccines.
AU Briles D.E.; Hollingshead S.K.; Swiatlo E.; **Brooks-Walter A.**; Szalai A.; Virolainen A.; McDaniel L.S.; Benton K.A.; White P.; Prellner K.; Hermansson A.; Aerts P.C.; Van Dijk H.; Crain M.J.
CS D.E. Briles, University of Alabama, 845 19th Street South, Birmingham, AL 35294, United States
SO Microbial Drug Resistance, (1997) 3/4 (401-408).
Refs: 61
ISSN: 1076-6294 CODEN: MDREFJ
CY United States
DT Journal; General Review
FS 004 Microbiology
037 Drug Literature Index
LA English

L8 ANSWER 14 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1997:281770 BIOSIS
DN PREV199799580973
TI The **pspC** gene encodes a second pneumococcal surface protein homologous to the gene encoding the protection-eliciting PspA protein of Streptococcus pneumoniae.
AU **Brooks-Walter, A. (1)**; Tart, R. C.; Briles, D. E.; Hollingshead, S. K.
CS (1) Univ. Alabama at Birmingham, Birmingham, AL USA
SO Abstracts of the General Meeting of the American Society for Microbiology, (1997) Vol. 97, No. 0, pp. 35.
Meeting Info.: 97th General Meeting of the American Society for Microbiology Miami Beach, Florida, USA May 4-8, 1997
ISSN: 1060-2011.
DT Conference; Abstract; Conference
LA English

=> d his

(FILE 'HOME' ENTERED AT 16:32:09 ON 19 NOV 2001)

FILE 'EMBASE, MEDLINE, BIOSIS, USPATFULL, JAPIO, WPIDS, CAPLUS, AGRICOLA, LIFESCI, BIOTECHDS, JICST-EPLUS' ENTERED AT 16:32:16 ON 19 NOV 2001
E BRILES DAVID E/AU
L1 216 S E1-E3
E HOLLINGSHEAD SUSAN K/AU
L2 107 S E2-E4

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                E BROOKS-WALTER ALEXIS/AU
                E BROOKS WALTER ALEXIS/AU
L3            64 S E1-E4
L4           324 S L1-L3
L5            38 S L4 AND PSPC
L6             6 S L5 AND EPITOP?
L7             4 DUP REM L6 (2 DUPLICATES REMOVED)
L8            14 DUP REM L5 (24 DUPLICATES REMOVED)

=> s pspc and epitop?

L9           14 PSPC AND EPITOP?

=> dup rem l9

PROCESSING COMPLETED FOR L9
L10            8 DUP REM L9 (6 DUPLICATES REMOVED)

=> d bib ab 1-8


L10  ANSWER 1 OF 8  USPATFULL
AN      2001:139158  USPATFULL
TI      Pneumococcal surface protein C (PspC), epitopic
        regions and strain selection thereof, and uses therefor
IN      Briles, David E., Birmingham, AL, United States
        Hollingshead, Susan K., Birmingham, AL, United States
        Brooks-Walter, Alexis, Birmingham, AL, United States
PI      US 2001016200      A1   20010823
AI      US 2000-748875     A1   20001226 (9)
RLI     Division of Ser. No. US 1999-298523, filed on 23 Apr 1999,
PENDING
PRAI    US 1998-82728       19980423 (60)
DT      Utility
FS      APPLICATION
LREP    FROMMER LAWRENCE & HAUG, 745 FIFTH AVENUE, NEW YORK, NY, 10151
CLMN    Number of Claims: 27
ECL     Exemplary Claim: 1
DRWN    50 Drawing Page(s)
LN.CNT 1911
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      Disclosed and claimed are: epitopic regions of Pneumococcal
        Surface Protein C or "PspC", different clades of PspC
        , isolated and/or purified nucleic acid molecules such as DNA
encoding a
        fragment or portion of PspC such as an epitopic
        region of PspC or at least one epitope of
      PspC, uses for such nucleic acid molecules, e.g., to detect the
        presence of PspC or of S. pneumoniae by detecting a nucleic
        acid molecule therefor in a sample such as by amplification
and/or a
        polymerase chain reaction, vectors or plasmids which contain
and/or
        express such nucleic acid molecles, e.g., in vitro or in vivo,
        immunological, immunogenic or vaccine compositions including
at least
        one PspC and/or a portion thereof (such as at least one
      epitopic region of at least one PspC and/or at least
        one polypeptide encoding at least one epitop  of at least one
```

PspC), either alone or in further combination with at least one second pneumococcal antigen, such as at least one different **PspC** and/or a fragment thereof and/or at least one PspA and/or at least one **epitopic** region of at least one PspA and/or at least one polypeptide including at least one **epitope** of PspA. **PspC** or a fragment thereof, and thus a composition including **PspC** or a fragment thereof, can be administered by the same routes, and in approximately the same amounts, as PspA. Thus, the invention further provides methods for administering **PspC** or a fragment thereof, as well as uses of **PspC** or a fragment thereof to formulate such compositions.

L10 ANSWER 2 OF 8 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 1
AN 2001-091328 [10] WPIDS
DNC C2001-026881
TI Immunological composition for inducing an immunological response in an animal comprises pneumococcal proteins or vectors encoding the proteins.
DC B04 D16
IN ADES, E; BRILES, D E; CARLONE, G M; HUEBNER, R C; SAMPSON, J S
PA (AVET) AVENTIS PASTEUR; (CENT-N) CENTERS DISEASE CONTROL & PREVENTION;
(UABR-N) UAB RES FOUND
CYC 92
PI WO 2000076541 A1 20001221 (200110)* EN 38p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ
EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK
LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI
SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000061210 A 20010102 (200121)
ADT WO 2000076541 A1 WO 2000-US40176 20000609; AU 2000061210 A AU 2000-61210
20000609
FDT AU 2000061210 A Based on WO 200076541
PRAI US 2000-587833 20000606; US 1999-138422P 19990610
AB WO 200076541 A UPAB: 20010220
NOVELTY - An immunological combination composition (I), comprising:
(i) a pneumococcal surface adhesion protein A (PsaA), an **epitope** of it or a vector that expresses PsaA or the **epitope**; and
(ii) pneumococcal surface proteins A and/or C (PspA/C) or **epitopes** of them or vectors that express them or their **epitopes**; or comprising
(iii) a vector that expresses two PsaA or **epitopes** of them, and/or **PspC** or an **epitope** of it.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the

following:
(1) inducing an immunological response in an animal comprising
administering (I);
(2) immunizing a host against pneumococcal infection, comprising
administering to the host two PsaA; and
(3) an immunogenic composition for intranasal administration to a
host susceptible to pneumococcal carriage to elicit a protective
immunological response against colonization with S. pneumoniae in the
nasopharynx, which comprises an immunizing amount of a combination of two
or more pneumococcal surface protein immunogens, wherein the combination
includes two PspA PsaA, or their immunogenic fragments.
ACTIVITY - Immunogenic; antibacterial. No suitable biological data
is given.
MECHANISM OF ACTION - Vaccine.
USE - The composition is used as a vaccine to induce an immunological
response in an animal or immunize a host against pneumococcal infection
(claimed) .
ADVANTAGE - The vaccine comprises a combination of immunogens which
provide the animal with an immunity against different types of S.
pneumoniae.
Dwg.0/0

L10 ANSWER 3 OF 8 BIOTECHDS COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-04961 BIOTECHDS
TI Immunological composition for inducing an immunological response in an
animal comprises pneumococcal proteins or vector encoding the proteins;
recombinant vaccine
AU Huebner R C; Sampson J S; Carlone G M; Ades E; Briles D E
PA Univ.Alabama-Res.Found.; Aventis; U.S.Cent.Dis.Contr.Prev.Atlanta
LO Birmingham, AL, USA; Swiftwater, PA, USA; Atlanta, GA, USA.
PI WO 2000076541 21 Dec 2000
AI WO 2000-US40176 9 Jun 2000
PRAI US 20003587833 6 Jun 2000; US 1999-138422 10 Jun 1999
DT Patent
LA English
OS WPI: 2001-091328 [10]
AB An immunological combination composition (I) is claimed. (I) contains a
pneumococcal surface adhesion protein-A (PsaA), an **epitope** of it or a vector that expresses PsaA or the **epitope**, and pneumococcal surface PsaA or C or **epitope** of them or vectors that express them or their **epitopes**, or containing a vector that expresses two PsaA or **epitopes** of them, or **PspC** or an **epitope** of it. (I) further contains adjuvant, e.g. cholera toxin subunit-B or alum. Also claimed are: inducing an

immunological response in an animal; immunizing a host against pneumococcal infection; an immunogenic composition for intranasal administration to a host susceptible to pneumococcal carriage to elicit a protective immunological response against colonization with Staphylococcus pneumoniae in the nasopharynx. The composition is used as a vaccine to induce an immunological response in an animal or immunize a host against pneumococcal infection. (38pp)

L10 ANSWER 4 OF 8 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 2
AN 1999-620581 [53] WPIDS
DNC C1999-181229
TI New **epitope** polypeptides of Pneumococcal surface protein C, used to develop products for immunological, immunogenic or vaccine compositions, particularly against Streptococcus pneumoniae infections.
DC B04 D16
IN BRILES, D E; BROOKS-WALTER, A; HOLLINGSHEAD, S K
PA (UYAL-N) UNIV ALABAMA; (BRIL-I) BRILES D E; (BROO-I) BROOKS-WALTER A;
(HOLL-I) HOLLINGSHEAD S K
CYC 87
PI WO 9953940 A1 19991028 (199953)* EN 108p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG US UZ VN YU ZA ZW
AU 9937584 A 19991108 (200014)
EP 1073450 A1 20010207 (200109) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 2001016200 A1 20010823 (200151)
ADT WO 9953940 A1 WO 1999-US8895 19990423; AU 9937584 A AU 1999-37584 19990423; EP 1073450 A1 EP 1999-919991 19990423, WO 1999-US8895 19990423;
US 2001016200 A1 Provisional US 1998-82728P 19980423, Div ex US 1999-298523 19990423, US 2000-748875 20001226
FDT AU 9937584 A Based on WO 9953940; EP 1073450 A1 Based on WO 9953940
PRAI US 1998-82728P 19980423; US 1999-298523 19990423; US 2000-748875
20001226
AB WO 9953940 A UPAB: 19991215
NOVELTY - (A) A novel isolated and/or purified polypeptide (I) comprises at least one **epitope** or **epitopic** region of Pneumococcal surface protein C (**PspC**).
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) an immunogenic, immunological or vaccine composition comprising a

polypeptide (I);
(2) an isolated and/or purified nucleic acid molecule comprising a
nucleotide sequence (II) encoding (I);
(3) a vector or plasmid (III) comprising (II);
(4) a vaccine or immunological or immunogenic composition (IV)
comprising (III);
(5) a method for eliciting an immunological response against Streptococcus pneumoniae comprising administering (I) or composition
comprising (I) or (III);
(6) a method for eliciting an anti-PspA antibody comprising administering (I) or a composition comprising (I) or (III);
(7) a method for detecting **pspC** and/or pspA or Streptococcus pneumoniae, comprising contacting the isolated nucleic acid
molecule with a sample and detecting hybridization where hybridization is
indicative of the presence of **pspC** and/or pspA or Streptococcus pneumoniae.
USE - The polypeptides or vectors can be used as immunogenic,
immunological or vaccine compositions (claimed). The compositions can be
used for eliciting an immunological response against Streptococcus
pneumoniae (SP) (claimed), which can cause otitis media, meningitis,
bacteremia and pneumonia. They can be used for eliciting an anti-PspA
antibody (claimed). The nucleic acid molecules can also be used for
detecting **pspC**, pspA or SP (claimed).
Dwg.0/21

L10 ANSWER 5 OF 8 USPATFULL
AN 1999:141308 USPATFULL
TI Viral defective interfering particles and uses thereof
IN Shih, Chiaho, Houston, TX, United States
Yuan, Ta-Tung, Galveston, TX, United States
PA The Board of Regents of the University of Texas System, Austin, TX,
United States (U.S. corporation)
PI US 5980901 19991109
AI US 1997-933480 19970918 (8)
PRAI US 1996-26313 19960918 (60)
DT Utility
FS Granted
EXNAM Primary Examiner: Eisenschenk, Frank C.; Assistant Examiner: Zeman, Mary
K
LREP Adler, Benjamin Aaron
CLMN Number of Claims: 9
ECL Exemplary Claim: 1
DRWN 30 Drawing Figure(s); 31 Drawing Page(s)
LN.CNT 1630
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a composition of matter comprising a

defective interfering virus particle, wherein said particle naturally occurs in a human infection and wherein said particles has a naturally occurring core antigen internal deletion. Provided is a pharmaceutical composition, comprising defective interfering virus particle and a pharmaceutically acceptable carrier. Provided is a method for preparing defective interfering virus, comprising the steps of: (1) introduce a defective interfering virus and a complementing plasmid expressing a wild type virus core antigen and optionally containing a drug resistance gene, into a recipient cell; (2) selecting for stably transfected colonies; (3) growing the drug resistant cells and screening for the production of virus DNA replication; and (4) collecting defective interfering virus particles from the medium. Further provided is a vaccine, comprising a defective interfering virus particle.

L10 ANSWER 6 OF 8 BIOTECHDS COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1999-05382 BIOTECHDS
TI Transformed Toxoplasma gondii tachyzoites expressing the circumsporozoite protein of Plasmodium knowlesi elicit a specific immune response in rhesus monkeys;
useful as a recombinant vaccine against malaria infection
AU di Cristina M; Ghouze F; Kocken C H M; Naitza S; Cellini P; Soldati D; Thomas A W; *Crisanti A
CS Univ.London; Biomed.Primate-Res.Cent.; Univ.Rome; Univ.Heidelberg
LO Imperial College, Department of Biology, Prince Consort Rd., London SW7 2BB, UK.
Email: acrs@bio.ic.ac.uk
SO Infect.Immun.; (1999) 67, 4, 1677-82
CODEN: INFIBR ISSN: 0019-9567
DT Journal
LA English
AB Plasmodium knowlesi circumsporozoite protein was expressed in Toxoplasma gondii tachyzoites cultured on human foreskin fibroblasts, using plasmid **pSPc**-myc/PkCS and a vector containing a selectable marker (both inserted by electroporation), which was then immunized into rhesus monkeys. An antibody response elicited against the immunodominant repeat **epitope** (EQP-AAG-AGG)2 was seen, although the animals failed to show a positive serum conversion against T. gondii. Toxoplasma antigen-specific antibody were detected only after a second inoculation

with a higher number of transformed tachyzoites. The boost induced an increased antibody response against the circumsporozoite protein associated with immunoglobulin class switching, thus demonstrating the establishment of immunological memory. The toxoplasma-derived protein is efficiently recognized by the monkey immune system and may represent an invaluable source of highly immunogenic malaria antigen for the production of recombinant vaccines. (37 ref)

L10 ANSWER 7 OF 8 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 3
AN 1999258992 EMBASE
TI Use of surface plasmon resonance for studies of protein-protein and protein-phospholipid membrane interactions: Application to the binding of factor VIII to von Willebrand factor and to phosphatidylserine-containing membranes.
AU Saenko E.; Sarafanov A.; Greco N.; Shima M.; Loster K.; Schwinn H.; Josic D.
CS E. Saenko, Holland Laboratory, American Red Cross, 15601 Crabbs Branch Way, Rockville, MD 20855, United States
SO Journal of Chromatography A, (1999) 852/1 (59-71).
Refs: 51
ISSN: 0021-9673 CODEN: JCRAEY
PUI S 0021-9673(99)00491-4
CY Netherlands
DT Journal; Conference Article
FS 025 Hematology
029 Clinical Biochemistry
037 Drug Literature Index
LA English
SL English
AB The surface plasmon resonance phenomenon is used for real time measurements of protein-protein and protein-membrane interactions. In the present study two surface plasmon resonance-based binding assays permitting study of the interaction of coagulation factor VIII (fVIII) with von Willebrand factor (vWf) and phospholipid have been developed. These interactions of fVIII are required for maintenance of fVIII concentration in circulation and for the assembly of the functional factor Xase complex, respectively. With these binding assays, the role of the light chain (LCh) in fVIII binding to vWf and to immobilized phospholipid monolayers and intact vesicles containing 25% phosphatidylserine (PS) and 4% PS was examined. The finding that K(d) of LCh binding to vWf (3.8 nM) is 9.5 times higher than that of fVIII (0.4 nM), indicates that the heavy

chain (HCh) is required for the maximal affinity of fVIII for vWf. In
contrast, affinities of LCh for 25/75 PS/phosphatidylcholine (PC) monolayers and 4/76/20 PSPC-phosphatidylethanolamine (PE) vesicles are similar to that of fVIII, indicating that LCh is solely responsible for these interactions. It was also examined how removal of the acidic region affects the binding affinity of the remaining part of LCh for vWf and phospholipid. It was demonstrated that the loss of the LCh acidic region upon thrombin cleavage leads to an 11 and 160-fold increase in the dissociation rate constant (k(off) value) and a 165 and 1500-fold increase in the K(d) value of the binding of fVIII fragment A3-C1-C2 to vWf compared to that of LCh and fVIII, respectively. In contrast, the binding affinity of A3-C1-C2 for PS-containing membranes was 8-11-fold higher than that of LCh.. Possible conformational change(s) in C2 domain upon removal of the acidic region were studied using anti-fVIII monoclonal antibody NMC-VIII/5 with an **epitope** within the C2 domain of LCh as a probe. The determined lower binding affinity of A3-C1-C2 for NMC-VIII/5 immobilized to a sensor chip than that of LCh, indicates that these conformational changes do occur.

L10 ANSWER 8 OF 8 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:42284 BIOSIS
DN PREV199900042284
TI Pneumococcal diversity: Considerations for new vaccine strategies with emphasis on pneumococcal surface protein A (PspA.
AU Briles, David E. (1); Tart, Rebecca Creech; Swiatlo, Edwin; Dillard, Joseph P.; Smith, Patricia; Benton, Kimberly A.; Ralph, Beth A.; Brooks-Walter, Alexis; Crain, Marilyn J.; Hollingshead, Susan K.; McDaniel, Larry S.
CS (1) Dep. Microbiology, University Alabama Birmingham, 658 BBRB, Mail Box 10, Birmingham, AL 35294-2170 USA
SO Clinical Microbiology Reviews, (Oct., 1998) Vol. 11, No. 4, pp. 645-657.
ISSN: 0893-8512.
DT General Review
LA English

=> s pneumococcal surface protein C

6 FILES SEARCHED...
L11 10 PNEUMOCOCCAL SURFACE PROTEIN C

=> dup rem l11

PROCESSING COMPLETED FOR L11
L12 7 DUP REM L11 (3 DUPLICATES REMOVED)

=> d bib ab 1-7

L12 ANSWER 1 OF 7 USPATFULL
AN 2001:139158 USPATFULL
TI **Pneumococcal surface protein C** (PspC), epitopic regions and strain selection thereof, and uses therefor
IN Briles, David E., Birmingham, AL, United States
Hollingshead, Susan K., Birmingham, AL, United States
Brooks-Walter, Alexis, Birmingham, AL, United States
PI US 2001016200 A1 20010823
AI US 2000-748875 A1 20001226 (9)
RLI Division of Ser. No. US 1999-298523, filed on 23 Apr 1999, PENDING
PRAI US 1998-82728 19980423 (60)
DT Utility
FS APPLICATION
LREP FROMMER LAWRENCE & HAUG, 745 FIFTH AVENUE, NEW YORK, NY, 10151
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN 50 Drawing Page(s)
LN.CNT 1911
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed and claimed are: epitopic regions of **Pneumococcal Surface Protein C** or "PspC", different clades of PspC, isolated and/or purified nucleic acid molecules such as DNA encoding a fragment or portion of PspC such as an epitopic region of PspC or at least one epitope of PspC, uses for such nucleic acid molecules, e.g., to detect the presence of PspC or of S. pneumoniae by detecting a nucleic acid molecule therefor in a sample such as by amplification and/or a polymerase chain reaction, vectors or plasmids which contain and/or express such nucleic acid molecles, e.g., in vitro or in vivo, immunological, immunogenic or vaccine compositions including at least one PspC and/or a portion thereof (such as at least one epitopic region of at least one PspC and/or at least one polypeptide encoding at least one epitope of at least one PspC), either alone or in further combination with at least one second pneumococcal antigen, such as at least one different PspC and/or a fragment thereof and/or at least one PspA and/or at least one epitopic region of at least one PspA and/or

at least one polypeptide including at least one epitope of PspA. PspC or a fragment thereof, and thus a composition including PspC or a fragment thereof, can be administered by the same routes, and in approximately the same amounts, as PspA. Thus, the invention further provides methods for administering PspC or a fragment thereof, as well as uses of PspC or a fragment thereof to formulate such compositions.

L12 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2001 ACS
AN 2000:246547 CAPLUS
DN 133:236561
TI The potential to use PspA and other pneumococcal proteins to elicit protection against pneumococcal infection
AU Briles, David E.; Hollingshead, Susan; Brooks-Walter, Alexis; Nabors, Gary S.; Ferguson, Laura; Schilling, Margo; Gravenstein, Stephan; Braun, Pat; King, Janice; Swift, Amy
CS Department of Microbiology, University of Alabama, Birmingham, AL, 35294, USA
SO Vaccine (2000), 18(16), 1707-1711
CODEN: VACCDE; ISSN: 0264-410X
PB Elsevier Science Ltd.
DT Journal
LA English
AB Pneumococcal proteins, alone, in combination with each other, or in combination with capsular polysaccharide-protein conjugates may be useful pneumococcal vaccine components. Four proteins with a potential for use in vaccines are PspA, pneumolysin, PsaA, and PspC. In a mouse model of carriage, PsaA and PspC were the most efficacious vaccine proteins. Of these, PsaA was the best at eliciting protection against carriage. However, a combination of PspA and pneumolysin may elicit stronger immunity to pulmonary infection and possibly sepsis than either protein alone. Recently, a phase one trial of a recombinant family 1 PspA was completed in man. PspA was obsd. to be safe and immunogenic. Injection of 0.1 mL of immune serum dild. to 1/400 was able to protect mice from fatal infection with S. pneumoniae. Under these conditions, preimmune serum was not protective. The immune human serum protected mice from infections with pneumococci expressing either of the major PspA families

(1 and 2) and both of the pneumococcal capsular types tested: 3 and 6.
RE.CNT 24
RE
(3) Briles, D; Clin Microbiological Rev V11, P645 CAPLUS
(4) Briles, D; Effects of microbes on the immune system 2000, P263 CAPLUS
(5) Crain, M; Infect Immun 1990, V58, P3293 CAPLUS
(9) McDaniel, L; Infect Immun 1991, V59, P222 CAPLUS
(10) McDaniel, L; Infect Immun 1998, V66, P4748 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AN 2000:370908 BIOSIS
DN PREV200000370908
TI Regulation of the gene encoding **pneumococcal surface protein C** (pspC) in Streptococcus pneumoniae.
AU Balachandran, P. (1); Brooks-Walter, A. J. (1); Hollingshead, S. K. (1);
Briles, D. E. (1)
CS (1) University of Alabama, Birmingham, AL USA
SO Abstracts of the General Meeting of the American Society for Microbiology,
(2000) Vol. 100, pp. 101. print.
Meeting Info.: 100th General Meeting of the American Society for Microbiology Los Angeles, California, USA May 21-25, 2000 American Society
for Microbiology
. ISSN: 1060-2011.
DT Conference
LA English
SL English

L12 ANSWER 4 OF 7 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 1
AN 1999-620581 [53] WPIDS
DNC C1999-181229
TI New epitope polypeptides of **Pneumococcal surface protein C**, used to develop products for immunological, immunogenic or vaccine compositions, particularly against Streptococcus
pneumoniae infections.
DC B04 D16
IN BRILES, D E; BROOKS-WALTER, A; HOLLINGSHEAD, S K
PA (UYAL-N) UNIV ALABAMA; (BRIL-I) BRILES D E; (BROO-I) BROOKS-WALTER A;
(HOLL-I) HOLLINGSHEAD S K
CYC 87
PI WO 9953940 A1 19991028 (199953)* EN 108p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG US UZ VN YU ZA ZW

AU 9937584 A 19991108 (200014)
EP 1073450 A1 20010207 (200109) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 2001016200 A1 20010823 (200151)
ADT WO 9953940 A1 WO 1999-US8895 19990423; AU 9937584 A AU 1999-37584 19990423; EP 1073450 A1 EP 1999-919991 19990423, WO 1999-US8895 19990423;
US 2001016200 A1 Provisional US 1998-82728P 19980423, Div ex US 1999-298523 19990423, US 2000-748875 20001226
FDT AU 9937584 A Based on WO 9953940; EP 1073450 A1 Based on WO 9953940
PRAI US 1998-82728P 19980423; US 1999-298523 19990423; US 2000-748875
20001226
AB WO 9953940 A UPAB: 19991215
NOVELTY - (A) A novel isolated and/or purified polypeptide (I) comprises
at least one epitope or epitopic region of **Pneumococcal surface protein C** (PspC).
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) an immunogenic, immunological or vaccine composition comprising a
polypeptide (I);
(2) an isolated and/or purified nucleic acid molecule comprising a
nucleotide sequence (II) encoding (I);
(3) a vector or plasmid (III) comprising (II);
(4) a vaccine or immunological or immunogenic composition (IV)
comprising (III);
(5) a method for eliciting an immunological response against Streptococcus pneumoniae comprising administering (I) or composition
comprising (I) or (III);
(6) a method for eliciting an anti-PspA antibody comprising administering (I) or a composition comprising (I) or (III);
(7) a method for detecting pspC and/or pspA or Streptococcus pneumoniae, comprising contacting the isolated nucleic acid molecule with
a sample and detecting hybridization where hybridization is indicative of
the presence of pspC and/or pspA or Streptococcus pneumoniae.
USE - The polypeptides or vectors can be used as immunogenic,
immunological or vaccine compositions (claimed). The compositions can be
used for eliciting an immunological response against Streptococcus
pneumoniae (SP) (claimed), which can cause otitis media, meningitis,
bacteremia and pneumonia. They can be used for eliciting an anti-PspA
antibody (claimed). The nucleic acid molecules can also be used for
detecting pspC, pspA or SP (claimed).
Dwg.0/21

L12 ANSWER 5 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS

AN 1999:42284 BIOSIS
DN PREV199900042284
TI Pneumococcal diversity: Considerations for new vaccine strategies with
emphasis on pneumococcal surface protein A (PspA.
AU Briles, David E. (1); Tart, Rebecca Creech; Swiatlo, Edwin; Dillard,
Joseph P.; Smith, Patricia; Benton, Kimberly A.; Ralph, Beth A.;
Brooks-Walter, Alexis; Crain, Marilyn J.; Hollingshead, Susan K.;
McDaniel, Larry S.
CS (1) Dep. Microbiology, University Alabama Birmingham, 658 BBRB, Mail Box
10, Birmingham, AL 35294-2170 USA
SO Clinical Microbiology Reviews, (Oct., 1998) Vol. 11, No. 4, pp. 645-657.
ISSN: 0893-8512.
DT General Review
LA English

L12 ANSWER 6 OF 7 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 2
AN 1997-202002 [18] WPIDS
DNC C1997-064574
TI Streptococcus pneumoniae surface protein PspC and truncated PspA - used in
vaccines for protecting animals against S.pneumoniae infection.
DC B04 D16
IN BRILES, D E; BROOKS-WALTER, A; CRAIN, M J; HOLLINGSHEAD, S; MCDANIEL, L S;
SWIATLO, E; TART, R; YOTHER, J
PA (UABR-N) UAB RES FOUND; (UYAL-N) UNIV ALABAMA UAB RES FOUND ALABAMA BIRMI
CYC 23
PI WO 9709994 A1 19970320 (199718)* EN 227p
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA FI IL JP NO
AU 9672392 A 19970401 (199730)
NO 9801169 A 19980515 (199829)
FI 9800561 A 19980513 (199834)
AU 703434 B 19990325 (199924)
AU 9923626 A 19990701 (199937)
EP 946188 A1 19991006 (199946) EN
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 11513371 W 19991116 (200005) 342p
ADT WO 9709994 A1 WO 1996-US14819 19960916; AU 9672392 A AU 1996-72392
19960916; NO 9801169 A WO 1996-US14819 19960916, NO 1998-1169 19980316; FI
9800561 A WO 1996-US14819 19960916, FI 1998-561 19980313; AU 703434 B AU
1996-72392 19960916; AU 9923626 A AU 1999-23626 19990407; EP 946188 A1 EP
1996-933794 19960916, WO 1996-US14819 19960916; JP 11513371 W WO 1996-US14819 19960916, JP 1997-512172 19960916
FDT AU 9672392 A Based on WO 9709994; AU 703434 B Previous Publ. AU 9672392,
Based on WO 9709994; AU 9923626 A Div ex AU 703434; EP 946188 A1 Based on
WO 9709994; JP 11513371 W Based on WO 9709994

PRAI US 1995-529055 19950915
AB WO 9709994 A UPAB: 19970502
An isolated peptide fragment (A) of Streptococcus pneumoniae surface protein A (PspA) corresp. to residues 1-115, 1-260, 192-588 or 192-299 is new. Also new is an amino acid (aa) molecule (B) comprising **pneumococcal surface protein C** (PspC) of S. pneumoniae having alpha -helical (pref. comprising a C-terminus with substantial homology to a protection-eliciting region of PspA), proline rich and repeat regions. Also claimed are: (1) an isolated DNA molecule (I) encoding (A); (2) an isolated DNA molecule (II) encoding (B); and (3) an isolated DNA molecule (Ia) consisting of nucleotides 1-26, 1967-1990, 161-187, 1093-1117, 1312-1331 or 1333-1355 of the Streptococcus pneumoniae surface protein A gene (pspA).
USE - The truncated PspA peptides (A) and the PspA-like protein, PspC (B) or fragments of these (e.g. 8-9 aa for a CD4+ T-cell response and 13-25 aa for a CD8+ T-cell response) may be used in vaccines for protection against S. pneumoniae infection and hence for the prevention of diseases caused by S. pneumoniae such as meningitis, otitis media, bacteraemia and pneumonia. Fragments of (I), (Ia) or (II) may be used as primers or probes for the identification and amplification of PspA, PspC and related genes. In partic., fragments derived from the highly conserved repeat region of PspA (such as the 13 specific sequences derived from S.pneumoniae Rx1 PspA) or PspC are useful for the identification of most if not all pneumococcal strains.
Dwg.0/29

L12 ANSWER 7 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1998:95078 BIOSIS
DN PREV199800095078
TI PspA and PspC: Their potential for use as pneumococcal vaccines.
AU Briles, David E. (1); Hollingshead, Susan K.; Swiatlo, Edwin; Brooks-Walter, Alexis; Szalai, Alex; Virolainen, Anni; McDaniel, Larry S.; Benton, Kimberly A.; White, Peter; Prellner, Karin; Hermansson, Anne; Aerts, Piet C.; Van Dijk, Hans; Crain, Marilyn J.
CS (1) Univ. Alabama at Birmingham, 845 19th St. South, Room 658, Birmingham, AL 35294 USA
SO Microbial Drug Resistance, (Winter, 1997) Vol. 3, No. 4, pp. 401-408.
ISSN: 1076-6294.
DT Article

LA English

=> s pneumococcal surface protein

L13 500 PNEUMOCOCCAL SURFACE PROTEIN

=> s l13 and (epitop? or proline rich or helical)

L14 173 L13 AND (EPITOP? OR PROLINE RICH OR HELICAL)

=> s l14 and (pspc or pspa like)

L15 25 L14 AND (PSPC OR PSPA LIKE)

=> dup rem l15

PROCESSING COMPLETED FOR L15
L16 10 DUP REM L15 (15 DUPLICATES REMOVED)

=> d bib ab 1-10

L16 ANSWER 1 OF 10 USPATFULL
AN 2001:139158 USPATFULL
TI **Pneumococcal surface protein** C (**PspC**), **epitopic** regions and strain selection thereof, and uses therefor
IN Briles, David E., Birmingham, AL, United States
Hollingshead, Susan K., Birmingham, AL, United States
Brooks-Walter, Alexis, Birmingham, AL, United States
PI US 2001016200 A1 20010823
AI US 2000-748875 A1 20001226 (9)
RLI Division of Ser. No. US 1999-298523, filed on 23 Apr 1999, PENDING
PRAI US 1998-82728 19980423 (60)
DT Utility
FS APPLICATION
LREP FROMMER LAWRENCE & HAUG, 745 FIFTH AVENUE, NEW YORK, NY, 10151
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN 50 Drawing Page(s)
LN.CNT 1911
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed and claimed are: **epitopic** regions of **Pneumococcal Surface Protein** C or " **PspC**", different clades of **PspC**, isolated and/or purified nucleic acid molecules such as DNA encoding a fragment or portion of **PspC** such as an **epitopic** region of **PspC** or at least one **epitope** of **PspC**, uses for such nucleic acid molecules, e.g., to detect the presence of **PspC** or of S. pneumoniae by detecting a nucleic acid molecule therefor in a sample such as by amplification and/or a polymerase chain reaction, vectors or plasmids which contain and/or express such nucleic acid molecles, e.g., in vitro or in vivo, immunological, immunogenic or

vaccine compositions including at least one **PspC** and/or a portion thereof (such as at least one **epitopic** region of at least one **PspC** and/or at least one polypeptide encoding at least one **epitope** of at least one **PspC**), either alone or in further combination with at least one second pneumococcal antigen, such as at least one different **PspC** and/or a fragment thereof and/or at least one PspA and/or at least one **epitopic** region of at least one PspA and/or at least one polypeptide including at least one **epitope** of PspA. **PspC** or a fragment thereof, and thus a composition including **PspC** or a fragment thereof, can be administered by the same routes, and in approximately the same amounts, as PspA. Thus, the invention further provides methods for administering **PspC** or a fragment thereof, as well as uses of **PspC** or a fragment thereof to formulate such compositions.

L16 ANSWER 2 OF 10 USPATFULL
AN 2001:158472 USPATFULL
TI Method for isolating a C3 binding protein of streptococcus pneumoniae
IN Hostetter, Margaret K., New Haven, CT, United States
Cheng, Qi, Plymouth, MN, United States
PA Regents of the University of Minnesota, Minneapolis, MN, United States
(U.S. corporation)
PI US 6291654 B1 20010918
WO 9821337 19980522
AI US 1999-308022 19990512 (9)
WO 1997-US20586 19971112
19990512 PCT 371 date
19990512 PCT 102(e) date
PRAI US 1996-29444 19961112 (60)
US 1997-38086 19970218 (60)
US 1997-59368 19970919 (60)
US 1997-62473 19971016 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wortman, Donna C.; Assistant Examiner: Zeman, Robert A.
LREP Mueting, Raasch & Gebhardt, P.A.
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 7 Drawing Page(s)
LN.CNT 1263
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to the identification of a human complement C3 binding protein from Streptococcus pneumoniae and to its sequence and to methods for its purification and use. The protein binds but does not degrade or cleave C3 and is implicated in S. pneumoniae virulence. The protein is recognized by antibodies produced by humans recovering from

pneumococcal infection.

L16 ANSWER 3 OF 10 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 1
AN 2001151303 EMBASE
TI Characterization of binding of human lactoferrin to **pneumococcal surface protein** A.
AU Hakansson A.; Roche H.; Mirza S.; McDaniel L.S.; Brooks-Walter A.; Briles D.E.
CS A. Hakansson, Department of Microbiology, University of Alabama, BBRB-662 Box 10, 845 19th Street South, Birmingham, AL 35294, United States. Anders.Hakansson@mig.lu.se
SO Infection and Immunity, (2001) 69/5 (3372-3381). Refs: 60 ISSN: 0019-9567 CODEN: INFIBR
CY United States
DT Journal; Article
FS 004 Microbiology
005 General Pathology and Pathological Anatomy
026 Immunology, Serology and Transplantation
LA English
SL English
AB Human lactoferrin is an iron-binding glycoprotein that is particularly prominent in exocrine secretions and leukocytes and is also found in serum, especially during inflammation. It is able to sequester iron from microbes and has immunomodulatory functions, including inhibition of both complement activation and cytokine production. This study used mutants lacking **pneumococcal surface protein** A (PspA) and **PspC** to demonstrate that the binding of human lactoferrin to the surface of Streptococcus pneumoniae was entirely dependent on PspA. Lactoferrin bound both family 1 and family 2 PspAs. Binding of lactoferrin to PspA was shown by surface colocalization with PspA and was verified by the lack of binding to PspA-negative mutants. Lactoferrin was expressed on the body of the cells but was largely absent from the poles. **PspC** showed exactly the same distribution on the pneumococcal surface as PspA but did not bind lactoferrin. PspA's binding site for lactoferrin was mapped using recombinant fragments of PspA of families 1 and 2. Binding of human lactoferrin was detected primarily in the C-terminal half of the .alpha.-**helical** domain of PspA (amino acids 167 to 288 of PspA/Rx1), with no binding to the N-terminal 115 amino acids in either strain. The interaction was highly specific. As observed

previously, bovine lactoferrin bound poorly to PspA. Human transferrin did not bind PspA at all. The binding of lactoferrin to S. pneumoniae might provide a way for the bacteria to interfere with host immune functions or to aid in the acquisition of iron at the site of infection.

L16 ANSWER 4 OF 10 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 2
AN 2001-091328 [10] WPIDS
DNC C2001-026881
TI Immunological composition for inducing an immunological response in an animal comprises pneumococcal proteins or vectors encoding the proteins.
DC B04 D16
IN ADES, E; BRILES, D E; CARLONE, G M; HUEBNER, R C; SAMPSON, J S
PA (AVET) AVENTIS PASTEUR; (CENT-N) CENTERS DISEASE CONTROL & PREVENTION; (UABR-N) UAB RES FOUND
CYC 92
PI WO 2000076541 A1 20001221 (200110)* EN 38p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000061210 A 20010102 (200121)
ADT WO 2000076541 A1 WO 2000-US40176 20000609; AU 2000061210 A AU 2000-61210 20000609
FDT AU 2000061210 A Based on WO 200076541
PRAI US 2000-587833 20000606; US 1999-138422P 19990610
AB WO 200076541 A UPAB: 20010220
NOVELTY - An immunological combination composition (I), comprising:
(i) a pneumococcal surface adhesion protein A (PsaA), an **epitope** of it or a vector that expresses PsaA or the **epitope**; and
(ii) pneumococcal surface proteins A and/or C (PspA/C) or **epitopes** of them or vectors that express them or their **epitopes**; or comprising
(iii) a vector that expresses two PsaA or **epitopes** of them, and/or **PspC** or an **epitope** of it.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) inducing an immunological response in an animal comprising administering (I);
(2) immunizing a host against pneumococcal infection, comprising

administering to the host two PsaA; and
(3) an immunogenic composition for intranasal administration to a host susceptible to pneumococcal carriage to elicit a protective immunological response against colonization with S. pneumoniae in the nasopharynx, which comprises an immunizing amount of a combination of two or more **pneumococcal surface protein** immunogens, wherein the combination includes two PspA PsaA, or their immunogenic fragments.
ACTIVITY - Immunogenic; antibacterial. No suitable biological data is given.
MECHANISM OF ACTION - Vaccine.
USE - The composition is used as a vaccine to induce an immunological response in an animal or immunize a host against pneumococcal infection (claimed) .
ADVANTAGE - The vaccine comprises a combination of immunogens which provide the animal with an immunity against different types of S. pneumoniae.
Dwg.0/0

L16 ANSWER 5 OF 10 BIOTECHDS COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 2001-04961 BIOTECHDS
TI Immunological composition for inducing an immunological response in an animal comprises pneumococcal proteins or vector encoding the proteins;
recombinant vaccine
AU Huebner R C; Sampson J S; Carlone G M; Ades E; Briles D E
PA Univ.Alabama-Res.Found.; Aventis; U.S.Cent.Dis.Contr.Prev.Atlanta
LO Birmingham, AL, USA; Swiftwater, PA, USA; Atlanta, GA, USA.
PI WO 2000076541 21 Dec 2000
AI WO 2000-US40176 9 Jun 2000
PRAI US 20003587833 6 Jun 2000; US 1999-138422 10 Jun 1999
DT Patent
LA English
OS WPI: 2001-091328 [10]
AB An immunological combination composition (I) is claimed. (I) contains a pneumococcal surface adhesion protein-A (PsaA), an **epitope** of it or a vector that expresses PsaA or the **epitope**, and pneumococcal surface PsaA or C or **epitope** of them or vectors that express them or their **epitopes**, or containing a vector that expresses two PsaA or **epitopes** of them, or **PspC** or an **epitope** of it. (I) further contains adjuvant, e.g. cholera toxin subunit-B or alum. Also claimed are: inducing an immunological response in an animal; immunizing a host against pneumococcal infection; an immunogenic composition for intranasal administration to a host susceptible to pneumococcal carriage to elicit a

protective immunological response against colonization with Staphylococcus pneumoniae in the nasopharynx. The composition is used as a vaccine to induce an immunological response in an animal or immunize a host against pneumococcal infection. (38pp)

L16 ANSWER 6 OF 10 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
DUPLICATE 3
AN 1999-620581 [53] WPIDS
DNC C1999-181229
TI New **epitope** polypeptides of **Pneumococcal surface protein** C, used to develop products for immunological, immunogenic or vaccine compositions, particularly against Streptococcus pneumoniae infections.
DC B04 D16
IN BRILES, D E; BROOKS-WALTER, A; HOLLINGSHEAD, S K
PA (UYAL-N) UNIV ALABAMA; (BRIL-I) BRILES D E; (BROO-I) BROOKS-WALTER A; (HOLL-I) HOLLINGSHEAD S K
CYC 87
PI WO 9953940 A1 19991028 (199953)* EN 108p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG US UZ VN YU ZA ZW
AU 9937584 A 19991108 (200014)
EP 1073450 A1 20010207 (200109) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 2001016200 A1 20010823 (200151)
ADT WO 9953940 A1 WO 1999-US8895 19990423; AU 9937584 A AU 1999-37584 19990423; EP 1073450 A1 EP 1999-919991 19990423, WO 1999-US8895 19990423;
US 2001016200 A1 Provisional US 1998-82728P 19980423, Div ex US 1999-298523 19990423, US 2000-748875 20001226
FDT AU 9937584 A Based on WO 9953940; EP 1073450 A1 Based on WO 9953940
PRAI US 1998-82728P 19980423; US 1999-298523 19990423; US 2000-748875 20001226
AB WO 9953940 A UPAB: 19991215
NOVELTY - (A) A novel isolated and/or purified polypeptide (I) comprises at least one **epitope** or **epitopic** region of **Pneumococcal surface protein** C (**PspC**).
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) an immunogenic, immunological or vaccine composition comprising a polypeptide (I);

(2) an isolated and/or purified nucleic acid molecule comprising a
nucleotide sequence (II) encoding (I);
(3) a vector or plasmid (III) comprising (II);
(4) a vaccine or immunological or immunogenic composition (IV)
comprising (III);
(5) a method for eliciting an immunological response against Streptococcus pneumoniae comprising administering (I) or composition
comprising (I) or (III);
(6) a method for eliciting an anti-PspA antibody comprising administering (I) or a composition comprising (I) or (III);
(7) a method for detecting **pspC** and/or pspA or Streptococcus pneumoniae, comprising contacting the isolated nucleic acid
molecule with a sample and detecting hybridization where hybridization is
indicative of the presence of **pspC** and/or pspA or Streptococcus pneumoniae.
USE - The polypeptides or vectors can be used as immunogenic,
immunological or vaccine compositions (claimed). The compositions can be
used for eliciting an immunological response against Streptococcus
pneumoniae (SP) (claimed), which can cause otitis media, meningitis,
bacteremia and pneumonia. They can be used for eliciting an anti-PspA
antibody (claimed). The nucleic acid molecules can also be used for
detecting **pspC**, pspA or SP (claimed).
Dwg.0/21

L16 ANSWER 7 OF 10 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 4
AN 1999406746 EMBASE
TI The **pspC** gene of Streptococcus pneumoniae encodes a polymorphic protein, **PspC**, which elicits cross-reactive antibodies to PspA and provides immunity to pneumococcal bacteremia.
AU Brooks-Walter A.; Briles D.E.; Hollingshead S.K.
CS A. Brooks-Walter, Department of Microbiology, University of Alabama,
Birmingham, AL 35294, United States. alexis@uab.edu
SO Infection and Immunity, (1999) 67/12 (6533-6542).
Refs: 33
ISSN: 0019-9567 CODEN: INFIBR
CY United States
DT Journal; Article
FS 004 Microbiology
026 Immunology, Serology and Transplantation
LA English
SL English
AB **PspC** is one of three designations for a **pneumococcal surface protein** whose gene is present in approximately 75% of all Streptococcus pneumoniae strains. Under the name SpsA, the
protein has been shown to bind secretory immunoglobulin A (S.

Hammerschmidt, S. R. Talay, P. Brandtzaeg, and G. S. Chhatwal, Mol.
Microbiol. 25:1113-1124, 1997). Under the name CbpA, the protein has been
shown to interact with human epithelial and endothelial cells (C. Rosenow
et al., Mol. Microbiol. 25:819-829, 1997). The gene is paralogous to the
pspA gene in S. pneumoniae and was thus called **pspC** (A.
Brooks-Walter, R. C. Tart, D. E. Briles, and S. K. Hollingshead, Abstracts
of the 97th General Meeting of the American Society for Microbiology
1997). Sequence comparisons of five published and seven new alleles reveal
that this gene has a mosaic structure, and modular domains have
contributed to gene diversity during evolution. Two major clades exist:
clade A alleles are larger and contain an extra module that is shared with
many pspA alleles; clade B alleles are smaller and lack this **pspA -like** domain. All alleles have a **proline-rich**
domain and a choline-binding repeat domain that show 0% divergence from
similar domains in the PspA protein. Immunization of a rabbit with a
recombinant clade B **PspC** molecule produced antiserum that cross-
reacted with both **PspC** and PspA from 15 pneumococcal isolates.
The cross- reactive antibodies afforded cross-protection in a mouse model
system. Mice immunized with **PspC** were protected against
challenge with a strain that expressed PspA but not **PspC**. The
PspA- and **PspC**-cross-reactive antibodies were directed to the
proline-rich domain present in both molecules.

L16 ANSWER 8 OF 10 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:42284 BIOSIS
DN PREV199900042284
TI Pneumococcal diversity: Considerations for new vaccine strategies with
emphasis on **pneumococcal surface protein** A
(PspA.
AU Briles, David E. (1); Tart, Rebecca Creech; Swiatlo, Edwin; Dillard,
Joseph P.; Smith, Patricia; Benton, Kimberly A.; Ralph, Beth A.;
Brooks-Walter, Alexis; Crain, Marilyn J.; Hollingshead, Susan K.;
McDaniel, Larry S.
CS (1) Dep. Microbiology, University Alabama Birmingham, 658 BBRB, Mail Box
10, Birmingham, AL 35294-2170 USA
SO Clinical Microbiology Reviews, (Oct., 1998) Vol. 11, No. 4, pp. 645-657.
ISSN: 0893-8512.
DT General Review
LA English

L16 ANSWER 9 OF 10 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1997-202002 [18] WPIDS
DNC C1997-064574

TI Streptococcus pneumoniae surface protein **PspC** and truncated PspA
- used in vaccines for protecting animals against S.pneumoniae infection.
DC B04 D16
IN BRILES, D E; BROOKS-WALTER, A; CRAIN, M J; HOLLINGSHEAD, S; MCDANIEL, L S;
SWIATLO, E; TART, R; YOTHER, J
PA (UABR-N) UAB RES FOUND; (UYAL-N) UNIV ALABAMA UAB RES FOUND ALABAMA BIRMI
CYC 23
PI WO 9709994 A1 19970320 (199718)* EN 227p
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA FI IL JP NO
AU 9672392 A 19970401 (199730)
NO 9801169 A 19980515 (199829)
FI 9800561 A 19980513 (199834)
AU 703434 B 19990325 (199924)
AU 9923626 A 19990701 (199937)
EP 946188 A1 19991006 (199946) EN
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 11513371 W 19991116 (200005) 342p
ADT WO 9709994 A1 WO 1996-US14819 19960916; AU 9672392 A AU 1996-72392
19960916; NO 9801169 A WO 1996-US14819 19960916, NO 1998-1169 19980316; FI
9800561 A WO 1996-US14819 19960916, FI 1998-561 19980313; AU 703434 B AU
1996-72392 19960916; AU 9923626 A AU 1999-23626 19990407; EP 946188 A1 EP
1996-933794 19960916, WO 1996-US14819 19960916; JP 11513371 W WO
1996-US14819 19960916, JP 1997-512172 19960916
FDT AU 9672392 A Based on WO 9709994; AU 703434 B Previous Publ. AU 9672392,
Based on WO 9709994; AU 9923626 A Div ex AU 703434; EP 946188 A1 Based on
WO 9709994; JP 11513371 W Based on WO 9709994
PRAI US 1995-529055 19950915
AB WO 9709994 A UPAB: 19970502
An isolated peptide fragment (A) of Streptococcus pneumoniae surface
protein A (PspA) corresp. to residues 1-115, 1-260, 192-588 or 192-299 is
new. Also new is an amino acid (aa) molecule (B) comprising
pneumococcal surface protein C (**PspC**
) of S. pneumoniae having alpha -**helical** (pref. comprising a
C-terminus with substantial homology to a protection-eliciting region of
PspA), **proline rich** and repeat regions. Also claimed
are: (1) an isolated DNA molecule (I) encoding (A); (2) an isolated DNA
molecule (II) encoding (B); and (3) an isolated DNA molecule (Ia)
consisting of nucleotides 1-26, 1967-1990, 161-187, 1093-1117, 1312-1331
or 1333-1355 of the Streptococcus pneumoniae surface protein A gene
(pspA).
USE - The truncated PspA peptides (A) and the **PspA-like** protein, **PspC** (B) or fragments of these (e.g. 8-9
aa for a CD4+ T-cell response and 13-25 aa for a CD8+ T-cell response) may

be used in vaccines for protection against S. pneumoniae infection and hence for the prevention of diseases caused by S. pneumoniae such as meningitis, otitis media, bacteraemia and pneumonia. Fragments of (I), (Ia) or (II) may be used as primers or probes for the identification and amplification of PspA, **PspC** and related genes. In partic., fragments derived from the highly conserved repeat region of PspA (such as the 13 specific sequences derived from S.pneumoniae Rx1 PspA) or **PspC** are useful for the identification of most if not all pneumococcal strains.
Dwg.0/29

L16 ANSWER 10 OF 10 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 5
AN 97119757 EMBASE
DN 1997119757
TI Oligonucleotides identify conserved and variable regions of pspA and **pspA-like** sequences of Streptococcus pneumoniae.
AU Swiatlo E.; Brooks-Walter A.; Briles D.E.; McDaniel L.S.
CS E. Swiatlo, Department of Microbiology, University of Alabama at Birmingham, Bevill Biomedical Research Building, Birmingham, AL 35294-2170, United States. docs018@uabdpo.dpo.uab.edu
SO Gene, (1997) 188/2 (279-284).
Refs: 19
ISSN: 0378-1119 CODEN: GENED6
PUI S 0378-1119(96)00823-2
CY Netherlands
DT Journal; Article
FS 004 Microbiology
029 Clinical Biochemistry
LA English
SL English
AB **Pneumococcal surface protein** A (PspA) is an immunogenic surface protein of Streptococcus pneumoniae. PspA of S. pneumoniae strain Rx1 is a 65-kDa protein composed of an .alpha.-**helical** N-terminus of 288 amino acids followed by an 82-amino-acid **proline-rich** region, 10 repeats of 20 amino acids each, and a 17-amino-acid C-terminus. It has been demonstrated that the 3'-half of pspA is relatively conserved among unrelated pneumococcal isolates and the 5'-half of the gene is highly variable. Additionally, nearly all pneumococcal strains contain at least one other locus with sequence homology to pspA. In this study oligonucleotides derived from the DNA sequence of pspA of Rx1 were used both as hybridization probes and as primers in the polymerase chain reaction (PCR) to investigate genetic variation within domains of pspA and in the **pspA-like**